

fession does not necessarily imply success in the other. No amount of field experiments will make the farmer into a successful business man, but there is one way in which he can rely on getting the full value of his produce—by cooperation. Only in this way can the small farmer hope to buy and sell to the best advantage, and to make anything out of market fluctuations that are capable of yielding profit. This question is discussed in the *Quarterly Review* by "Home Counties," whose interesting article deserves to be widely read.

In conclusion, no notice of current agricultural publications intended for the tenant farmer would be complete without reference to the leaflets of the Board of Agriculture, which deal in simple manner with a large variety of important topics. Every effort is made to ensure that these leaflets should reach the men for whom they are intended.

THE BRITISH SCIENCE GUILD.

THE verbatim report of the third annual meeting of the British Science Guild, held at the Mansion House on January 22, has just been issued. We give extracts from the speeches made by Sir William Ramsay and Sir Frederick Pollock.

After referring to the work done by the Guild during the year, summarised in *NATURE* of January 28, Sir William Ramsay said:—"The greatest danger, I think, from which we suffer is this inherent one in the minds of so many of us, that it is not necessary to prepare beforehand for events which we can perfectly well prophesy will happen. I want to draw attention to one subject which I think a committee of the Guild ought to consider. It is not merely of the utmost importance to ourselves as a race, but it is of the greatest importance taken in connection with any legislative proposals of any Government. Let me give you an example from private life. No doubt most of us, perhaps all, have made our wills. We prepare, in a sense, for death. That is to save our successors from a considerable amount of trouble. Again, if we are well, we safeguard ourselves. We do not go into infected places, we indulge in exercise, we take a reasonable amount of sleep—in fact, we try to keep well; and if we fall ill from any chance we call in a doctor and take other measures to cure ourselves. In other words, we try our best to prolong our lives. Now, it appears to me that one of the duties of the State is to prolong the life of the nation. What does the life of the nation depend on? It depends not only upon the fitness of the people, but upon the amount of natural energy which is available to be used for driving power. We know pretty well from the results of the Royal Commission that our coal mines will not last for an indefinite time. Some say three hundred, others eight hundred years. Let us put it at five hundred. We can turn our minds back to the year 1400. We certainly did not know the people of England in those times, but many of us have a very lively knowledge of the sort of people they were and what they have done for us. They did great things in developing the country, building many churches, carrying out reforms according to their lights. We are now enjoying the benefits of what they did. Is it not only right and natural that we ought to have some consideration for persons living three or five hundred years hence? It does not need many "greats" before "grandson" until that time is reached in the picture of the mind—probably only six or seven. We ought in the present day to have consideration for the generations who will succeed us, and who will either profit by our foresight or regret our stupidity. Now, in this country our water-power is quite insignificant, and, indeed, if it were much larger than it is there is not much to be made of it. It has been calculated that the total water-power of Europe, excluding, perhaps, some few rivers in northern Russia, is equal to 2,000,000 horse-power. Why, we use 100,000,000 horse-power in England, so that even if we possessed the whole water-power of Europe we should hardly be supplying one-fiftieth of what we use from coal. I know there is a popular superstition that in view of the extraordinary inventions which we are witnessing in these days—long-distance telegraphy and so on—something will be discovered

in the future which will replace our present source of energy. One cannot say with absolute certainty that that will not happen, but I think any scientific man will say it is in the highest degree improbable. And what else have we to come and go upon? You may say that we might have an apparatus to utilise the tides; but the first storm knocks to bits any apparatus. Or solar heat? Again the first storm plays havoc with any machinery—and that of the costliest. One possibility is to dig a big hole deep enough into the earth and hope to get boiling water. Well, curiously enough, to-day's *Morning Post*, in its "Discovery and Invention" column, describes how Mr. Parsons has considered that very question. He says that to bore a hole twelve miles deep would cost 5,000,000*l.* and take eighty years. If we are going to bore that hole, ladies and gentlemen, it is time we began. Joking apart, without that possibility, there is no other source of energy. Now this points to the economisation of coal. It points to legislation in other directions. Are we going to limit the use of steam engines? Gas engines give us about three times the power for the same consumption of fuel. Are we going to pay attention to the afforestation of the country, so that when coal is done we shall still have wood? Are we going to stop the enormous loss of nitrogen, which is so serious, that it will be impossible after fifty years to get the necessary amount for the growth of our plants? Are we going to utilise our sewage? All these are questions of first importance, and I think the Guild should appoint a committee to see how we can save the waste that is going on, and so give our country a chance of longer life. It would be horrible to look forward to London becoming a fishing village of five to ten thousand people, built on the top of some magnificent ruins and supported by scanty agriculture. But it is only what we should have to look forward to unless something is done. Let us postpone that evil day as far as possible."

Sir Frederick Pollock, in moving that the annual report be adopted, said:—"I have been asked to say a few words on the Patents Act, 1907, and to explain that the new matter in that Act, the only matter which attracts public attention, is not a revolutionary enactment or a breach with any established fiscal policy, but a revival of principles upon which the whole of our legislation for patents started, and on which it has been continued. In the earliest days of grants to inventors, the King exercised the power of granting monopolies at his own will and pleasure. In the course of the sixteenth century strong and well-founded objections were raised to the indiscriminate granting of monopolies, and it came to be accepted as a principle that monopolies ought to be granted to inventors only on condition of their being able thereby to introduce new industries into the kingdom. That was assigned as the consideration for which monopolies were granted. And further, during the early history of this branch of monopolies, which ultimately became the foundation of our modern Patent Law, it was understood that the inventor was bound, not only to work his invention within the kingdom, but to teach the use of it to all who desired to learn it. Those principles continued to be observed until comparatively modern times. But from some time in the latter part of the eighteenth century the principle of effectively introducing the new invention to this country was rather lost sight of, and it was supposed that the rule of publishing the invention, so that any competent person could learn from the specification to make it and work it for himself, would be sufficient for the protection of the public. In recent days it has been found that specification is not enough, for it was discovered that there was such a thing as the "obstructive" working of patents. That might be done in two ways. A man might acquire an invention, not for the purpose of introducing it to this kingdom, but, on the contrary, to stifle it and prevent it from being worked at all. That is a point which has, I think, been rather overlooked in some of the public discussions on this subject. I believe that that mischief existed, and that it was quite proper to put an end to it. The other obstructive way was for foreign manufacturers to take out or buy up a British patent, and so get a practical monopoly by being able to stop anyone from manufacturing the invention here. It is obvious that in both these ways "unfair prejudice" might

be created against British manufacturers or against endeavours to establish new industries in this country. Now "unfair prejudice" in the Act does not mean successful competition, a sense in which the word is sometimes used. "Unfair prejudice" is a novel term, but "unfair competition" is now a recognised head of law in all civilised countries, though the words are less familiar here than in America.

"That, so far as I know, is the history of the new provisions of the Patents Act of 1907. If you read Section 24, the operative section, which has really been the text of these few remarks, together with Section 38, you will see that the object of the Act is not the protection of manufacturers against rival producers as producers, but the protection of the public, both producers and consumers, against the evils of excessive monopoly.

"I should like to say one word on the decline of the study of German. For about thirty years we have been in danger of attaching a slightly exaggerated value to German as compared with other modern languages. Now, it appears, there is a reaction in favour of French. So far as the study of French is concerned, I have not a word to say against it, but that the study of German should be declining seems to me, as to the framers of the report—and to my learned friend, if I may still call him so, Mr. Haldane—a matter of serious national importance. I can think of only two reasons why people should prefer French to German. They may suppose French to be easier, or they may suppose it to be more useful. As to being easier—and I must say it dogmatically, because there is no time to give reasons—having given much time to the study of both, I believe French is really the harder language to learn well. As to being more useful, French is certainly very useful indeed. Taking literature and business all round, perhaps one may say that French is more useful for the literary study of our own language and the history of our own civilisation, but when you come to business—and therein I include what is being done abroad in science and the application of science to industry—German is quite as important as French. Finally, it is becoming more and more indispensable to have a knowledge of foreign languages for any branch of life whatever."

FORTHCOMING BOOKS OF SCIENCE.

AGRICULTURE.

Wm. Blackwood and Sons.—Land and Equipment: being the first volume, complete in itself, of the new edition of *The Book of the Farm*; Farm Crops: being the second volume, complete in itself, of the new edition of *The Book of the Farm*, James Macdonald; Divisions 5 and 6, and vol. iii., of Stephens' *Book of the Farm*, illustrated. *Cassell and Co., Ltd.*—Live Stock: Breeds and Management, P. McConnell, illustrated. *John Murray.*—Fertilisers and Manures, A. D. Hall. *Kegan Paul and Co., Ltd.*—Notes on Rubber Cultivation, with Special Reference to Portuguese India, Lieut.-Colonel J. A. Wyllie and O. G. Ferreira, illustrated; Para Rubber Cultivation: Manual of the Planter in Malaysia, C. Mathieu, in French and English, illustrated.

ANTHROPOLOGY.

Macmillan and Co., Ltd.—Totemism and Exogamy: a Treatise on Certain Ancient Forms of Superstition and Society, Prof. J. G. Frazer, 3 vols. *The Oxford University Press.*—Bushman Paintings, reproduced from tracings made by H. Tongue and D. Bleek. *Sir Isaac Pitman and Sons, Ltd.*—Native Life in East Africa, Dr. K. Weule, translated, with an introduction and notes, by Miss Werner, illustrated. *The Rationalist Press Association, Ltd.*—The History of Anthropology, Dr. A. C. Haddon, F.R.S. *Swan Sonnenschein and Co., Ltd.*—Bushman Folk-lore, L. C. Lloyd, edited by Dr. G. M. Theal, illustrated: History and Ethnography of South Africa, 1505-1795, Dr. G. M. Theal, 3 vols., vols. ii. and iii.

BIOLOGY.

A. and C. Black.—A Treatise on Zoology, edited by Sir E. Ray Lankester, K.C.B., F.R.S., part ix., First Fascicle: Vertebrata Craniata, E. T. Goodrich, F.R.S.

illustrated. *The Cambridge University Press.*—Trees, the late Prof. H. Marshall Ward, F.R.S., vol. v., Form and Habit, with an appendix on Seedlings, illustrated; Darwin and Modern Science, essays by Prof. J. A. Thomson (on Darwin's Relations to his Predecessors), Prof. Weismann (on The Selection Theory), Prof. de Vries (on Variation), Prof. Bateson (on Heredity and Variation in Modern Lights), Prof. Strasburger (on The Minute Structure of Cells in Relation to Heredity), Prof. Schwalbe (on "The Descent of Man"), Prof. Haeckel (on Charles Darwin as an Anthropologist), Dr. J. G. Frazer (on Some Primitive Theories of the Origin of Man), Prof. Sedgwick (on The Influence of Darwin on the Study of Animal Embryology), Prof. W. B. Scott (on The Palæontological Record, i., Animals), Dr. D. H. Scott (on The Palæontological Record, ii., Plants), Prof. Klebs (on The Influence of Environment on the Forms of Plants), Prof. Loeb (on Experimental Study of the Influence of Environment on Animals), Prof. Poulton (on The Value of Colour in the Struggle for Life), Sir William Thiselton-Dyer (on Geographical Distribution of Plants), Dr. H. Gadow (on Geographical Distribution of Animals), Prof. Judd (on Darwin and Geology), Dr. Francis Darwin (on Darwin's Work on the Movements of Plants), Prof. Goebel (on The Biology of Flowers), Prof. Lloyd Morgan (on Mental Factors in Evolution), Prof. Höffding (on The Influence of the Conception of Evolution on Modern Philosophy), Prof. Bouglé (on Darwinism and Sociology), Rev. P. N. Waggett (on The Influence of Darwin on Religious Thought), Miss Jane Harrison (on The Influence of Darwinism on the Study of Religions), Dr. P. Giles (on Evolution and the Science of Language), Prof. Bury (on Darwinism and History), Sir George Darwin (on The Genesis of Double Stars), Mr. Wheatman (on The Evolution of Matter). The essays will be preceded by an introductory letter from Sir Joseph Hooker to the editor (Prof. Seward), and by a short biographical epitome, including the dates of publication of Charles Darwin's books and of the principal events in his life, illustrated. *Cassell and Co., Ltd.*—Gardening in the North, S. Arnott and R. P. Brotherton; The Nature Book, in 2 vols., vol. ii.; Wild Flowers in their Seasons, Figured and Described, F. E. Hulme; Familiar Swiss Flowers, Figured and Described, F. E. Hulme. *J. M. Dent and Co.*—Zoology, Prof. Herdman, F.R.S. (Scientific Primers); Physiology, Prof. Sherrington, F.R.S. (Scientific Primers); Dent's "Open-air" Nature Books, edited by W. P. Westell and H. E. Turner, (1) The Hedge I Know, (2) The Pond I Know, (3) The Wood I Know, (4) The Meadow I Know, (5) The Stream I Know, (6) The Common I Know. *Duckworth and Co.*—The Scientific Feeding of Animals, Prof. O. Kellner, translated by W. Goodwin; The Country Month by Month, J. A. Owen and Prof. G. S. Boulger, with notes by the late Lord Lilford, illustrated (new edition); Life and Evolution, F. W. Headley, illustrated (new edition). *T. C. and E. C. Jack.*—The British Bird Book, edited by F. B. Kirkman and others, in twelve sections, illustrated. *John Lane.*—The Making of Species, D. Dewar and F. Finn; The Book of Fern Culture, A. Hemsley; The Book of the Cottage Garden (Handbooks of Practical Gardening). *Methuen and Co.*—The Young Naturalist, W. P. Westell, illustrated. *The Oxford University Press.*—The Ecology of Plants, E. Warming, translated by P. Groom; Elementary Biology, J. W. Kirkaldy and I. N. Drummond; Experimental Embryology, Dr. J. W. Jenkinson, illustrated. *Kegan Paul and Co., Ltd.*—Evolution, Dr. Wasmann. *Sir Isaac Pitman and Sons, Ltd.*—The Teacher's Course of Elementary Science, F. Belton, part ii., Plant Life. *Grant Richards.*—The Complete Wildfowler Ashore and Afloat, G. Thorne and S. Duncan, illustrated; The Sport of Bird Study, H. K. Job, illustrated. *George Routledge and Sons, Ltd.*—The Balance of Nature and Modern Conditions of Cultivation: a Practical Manual of Animal Foes and Friends for the Country Gentleman, the Farmer, the Forester, the Gardener, and the Sportsman, G. Abbev, illustrated. *Swan Sonnenschein and Co., Ltd.*—Plant Life: a Manual of Botany for Schools, Prof. E. Warming, translated by M. Rehling and F. M. Thomas, illustrated; The Cell: its Anatomy and Physiology, Dr. O. Hertwig, edited by Dr. H. I. Campbell, illustrated (new edition); The Young Beetle Collector's Handbook, Dr. E. Hofmann and Dr.